

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
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Please review the attached document and return your comments, changes, etc. to Dr. Sharp by October 15.

NAME <i>Susan Mead</i>	TEL. NO. (or code) & EXT.
CODE (or other designation)	DATE <i>10/1/76</i>

NASA-Ames D:202-11
Moffett Field, California
September 30, 1976

JCS _____
JVD _____
SCM SEM _____
RMC _____

MEMORANDUM for Dean R. Chapman/Code S
Joseph C. Sharp/Code L ✓

From: Michel Bader

Subject: Proposed NMI on Payload Specialist Selection (copy attached)

The subject NMI is more than a routine management issuance--it is a policy-setting document which may severely control and restrict not only who can be a payload specialist but also the amount of control which the PI has over his payload. I sense the old OMSF attitude of "give me your requirements and your hardware, and we'll do it all for you."

Please have appropriate personnel in your directorate review and comment on this document, and submit integrated comments to me in the form of a Memorandum for Director. Headquarters has not yet set a deadline, but I argued against the two weeks they were proposing. Assuming they heard me, please have your comments to me by 20 October 1976.

Michel
Michel Bader

Enclosure:
Cy of proposed NMI

cc:
H. Mark

NASA MANAGEMENT INSTRUCTION

SUBJECT: SELECTION AND EMPLOYMENT OF PAYLOAD SPECIALISTS
FOR NASA SPONSORED MISSIONS WHICH MAY OR MAY NOT
CONTAIN NON-NASA SPONSORED PAYLOADS

1. PURPOSE

This management instruction provides a procedure for identifying the need for and the selection and employment of payload specialists (P/S) for STS missions.

2. APPLICABILITY

The procedure applies to all NASA sponsored missions which may or may not contain non-NASA sponsored payloads. (A corresponding NMI on P/S selection for non-NASA sponsored missions will be available.)

3. PAYLOAD SPECIALIST DESCRIPTION

A payload specialist will be responsible for the attainment of the objectives of a payload, or complement of payloads, assigned to him or her on a specific STS mission.

The flight duties of the P/S will consist of the management of the orbital operations planned for his or her payloads, which will include the specific operation of experiments or functional payload elements; real-time evaluation of experimental progress and results in orbit and/or support of such activities being conducted by ground operations;

support of data selection and transmission to the ground; real-time modification of experiment operations and procedures which must be coordinated with other payload specialists, the mission specialist, and ground management; and limited payload maintenance and repair. In addition, the P/S will support pre and post flight payload operations, as required.

The P/S will have a detailed knowledge of assigned payload objectives, requirements, instruments and subsystems. The P/S must be proficient in STS flight safety rules and emergency procedures and knowledgeable of certain orbiter systems, e.g., accommodations, life support hatches, tunnels, caution and warning.

4. DETERMINATION OF THE NEED FOR AND NUMBER OF PAYLOAD SPECIALISTS FOR A SPECIFIC STS MISSION

a. NASA - Sponsored Missions and Payloads

When Announcements of Opportunity (AO's) are issued for the development of payloads to be flown on STS missions, they will contain the requirement that the proposer describe the in-flight manned support which must be provided to his payload to assure successful completion of its objectives. The description will include definitions of necessary technical knowledge, required experience, functions to be performed, estimated operational time lines and any other special skills which may be required.

When approval is obtained to prepare for a specific mission, the mission payload planners will select from this source a compatible complement of payloads which will satisfy the objectives of the mission. As a part of the payload selection process, the mission planners will consolidate all requirements for in-flight manned support, provided in the proposal for each payload, into units of activity, each of which is estimated to exercise the full capabilities of a single payload specialist during the mission. In these estimations any support which could be provided by the mission specialist and pilot will be given full consideration. On the basis of this analysis, a preliminary identification of the number of payload specialists required for the mission will be made for the approval of the associate administrator who is responsible for the mission.

After the mission payload complement has been formally approved, a working group made up of each investigator who is responsible for an accepted payload, will be formed. This Investigator's Working Group (IWG) will be chaired by the mission scientist, or by someone of equivalent responsibility. The IWG will reexamine the consolidated requirements for manned payload support and verify or revise the number of payload specialists required for the mission. If revision is recommended, then it must be reapproved by the sponsoring associate administrator.

b. NASA-Sponsored Missions which Include Non-NASA Sponsored Payloads

Non-NASA sponsored payloads may be accepted on a NASA sponsored mission where it is determined, during the planning of the complement of payloads, that the full capability of the STS and its services are not being exercised. If these payloads need dedicated specialists, they will be allowed if accommodations for them are available. They will undergo the same medical examinations and mission independent training as do the specialists for NASA-sponsored payloads. Selected P/S in this category will be approved by the associate administrator responsible for the mission.

12ND LEVEL
Priority
for Universities?

5. NOMINATION AND SELECTION OF CANDIDATE PAYLOAD SPECIALISTS

Primary and backup payload specialists will be necessary for each approved position on a mission. At a time designated by the mission sponsoring associate administrator, three candidates will be nominated by the IWG to compete for each approved position on a mission. Where candidates fail the medical examination, they will be replaced as necessary to maintain a minimum of two candidates for each approved position. In the nomination of candidates, priority consideration will be given to members of the existing corps of mission specialists and pilots, experienced payload specialists, and trained backup specialists from previous missions. Where unique payload demands require special skills, and/or knowledge, not available from any of these experienced personnel, the IWG

will nominate additional candidates from other available sources; (see section nine). Final approval of all selected candidates will be the responsibility of the program associate administrator who sponsors the mission.

The proper procedures to be used by all IWGs to evaluate and nominate these payload specialist candidates, and subsequently, to select the undesignated pairs of candidates and the final primary payload specialists, will be established by a committee composed of appropriate representatives from the payload sponsoring Offices of Space Science, Applications, Aeronautics and Space Technology, Space Flight, and from the Offices of the General Counsel and Personnel. The chairman of this committee will be appointed by the Associate Administrator.

6. PHASE I MEDICAL EXAMINATION OF CANDIDATES

All selected candidates will submit to a NASA Class III Space Flight medical examination which will be prescribed by the Office of the NASA Director for Life Sciences and performed in two phases. Phase I of the medical examination will be conducted by certified examiners at any one of several locations, approved by the NASA Director for Life Sciences. After review of this examination by the NASA Medical Board, the IWG Chairman will be informed as to which candidates have passed. If, by this action, the cadre of candidates has been reduced to fewer than two for each flight position, the IWG will initiate the necessary

How does NASA pay for all non-NASA candidates from selection to final approval?

reprocessing to provide replacement. In addition, the results will be sent to the Director of Medical Operations at JSC in anticipation of further medical examinations.

7. PHASE II MEDICAL EXAMINATION OF CANDIDATES

All candidates who have passed the Phase I tests will report to the JSC Medical Operations Directorate where they will undergo the Phase II medical examination. This examination shall include NASA-specialized tests which predict physiological responses to the expected space flight environment. The specific formulation of these tests will be the responsibility of the NASA Director for Life Sciences. Again, the minimum level of two for each position will be maintained by replacement.

8. SELECTION OF UNDESIGNATED PRIMARY AND BACKUP PAYLOAD SPECIALISTS

Based upon the results of the medical examinations and consistent with the procedures established under Section 5 of this NMI, the IWG will recommend two candidates, undesignated as to which is primary or backup, to be trained to perform the duties required by each payload specialist position. Final approval of these candidates will be made by the program associate administrator.

9. DESIGNATION OF PRIMARY AND BACKUP PAYLOAD SPECIALISTS FOR EACH POSITION

Both candidate payload specialists in each assigned position will undergo training in all mission dependent duties required to support all of the payloads assigned

to their position. They will also be trained in the performance of all mission independent operational duties required by the OSF Flight Operations office. At the conclusion of their mission independent training, the JSC Flight Operations Directorate will certify all candidates who are capable of performing the required mission independent duties. — FLIGHT VEHICLE CARE?

At a time to be designated by the STS Operations office and as near to the flight date as possible, the IWG will apply the established selection procedures to each pair of payload specialists and recommend one to be primary and the other backup. The approval of this recommendation will be the responsibility of the program associate administrator.

This may not be expedient in the future!!

10. EMPLOYMENT OF PAYLOAD SPECIALISTS

There are three potential sources of payload specialists: NASA employees; other Federal employees, both civilian and military; and non-Federal personnel from private industry, universities, etc. The appropriate method for employment of candidates and subsequent payload specialists depends upon the source from which they are obtained.

NASA Employees

NASA Employees selected for training and possible service as payload specialists, may perform the required

duties as an extension of their current responsibilities, or if more appropriate, via a temporary duty assignment.

Other Federal Employees

Civilians from other Government agencies or active military personnel may be detailed to serve as payload specialists through agreements between the appropriate agencies and NASA.

Non-Federal Personnel

The services of non-Federal personnel from private industry, universities, etc., can be obtained in two ways.

1. A principal investigator, or his or her designee, may be employed as a payload specialist as a part of his or her existing payload development contract with NASA. His or her services would be acquired for a relatively short period of time with no employment commitment upon completion of the contract extension.
2. As an alternative, non-Federal personnel may be hired as government employees to serve as payload specialists in Excepted positions under Schedule A. This form of employment will require special approval by the Civil Service Commission.